Author's response to reviews

Title: Examining Characteristics, Knowledge and Regulatory Practices of Specialized Drug Shops in Sub-Saharan Africa: A Systematic Review of the Literature

Authors:

Francis N Wafula (fwafula@nairobi.kemri-wellcome.org)
Eric M Miriti (ericmiriti@yahoo.com)
Catherine A Goodman (cgoodman@nairobi.kemri-wellcome.org)

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Author's response to reviews: see over
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The Editors,
BioMed Central,

RE: RESPONSE TO REVIEWERS COMMENTS

Manuscript title: Examining Characteristics, Knowledge and Regulatory Practices of Specialized Drug Shops in Sub-Saharan Africa: A Systematic Review of the Literature

Kindly find below the responses to the reviewers comments. We would also like to pass our gratitude to the 2 reviewers, whose comments we found extremely helpful.

Kind regards

[Signature]

Francis Wafula (author for correspondence)
Email: fwafula@nairobi.kemri-wellcome.org
Reviewer responses

Reviewer 1

1) **Reviewer comment:** In the text, the articles are referred to by the country in which they were carried out. As the article stands now it is not possible to tell how representative the different studies were for the countries in which they were carried out.* In the results section, the authors should provide more information on the sampling used in the studies reviewed.

**Response:** We agree. There was a bit of confusion between part II drug stores and ADDOs in Tanzania for instance. We have corrected this throughout the manuscript by specifying the shop cadre each time Tanzania was mentioned. We also made similar clarifications across SDSs in other countries.

As far as describing sampling and representativeness is concerned, this would be impractical to do in the results section for each of the 62 studies. However, we do present the sample size and study location (rural/peri-urban or urban) among other characteristics for each study in table 2.

2) **Reviewer comment:** Results, Paragraph 3, page 4. ......Nearly all Tanzanian and Ugandan drug shops were reported to have health-related-college qualifications (11,23,24). Comment: What is meant here by college qualification? I am not sure that “ nurse assistant” in the Tanzanian drugstores in reference 24 is a college degree, rather a high school degree. This should be verified.

**Response:** Clarification made on page 4. The correct statement is in fact, ‘the majority of staff had some health related training’, rather than college-training. We go on to specify that ‘the majority were nurse aides.’

3) **Reviewer comment:** Discussion, paragr. 3 (Page 12): “Shops operating in rural areas also charged higher prices for medicines overall, presumably to cater for transport costs and compensate for low business activity (although higher competition may also explain lower prices in urban locations). ” This should be further discussed. The finding is a bit surprising given that the purchasing power of the urban population often is higher than the rural. The higher competition in cities may make up for this market difference but is it really a sufficient explanation for the
assumed difference? And how robust is the finding? Is there enough evidence to allow a general conclusion like that for SSA?

**Response:** Agreed, there was a bit of confusion in the way price variations were explained. This has been corrected to reflect the fact that the evidence is mixed and inconclusive, i.e. in Tanzania, higher prices were charged across rural locations, whereas (usually rural) non-pharmacy shops had lower prices across a number of other countries (page 12). Possible explanations have been provided, with a conclusion that more research needs to look at reasons underlying price variations, particularly in this era of global subsidies programs such as AMFm.

**Reviewer comment:** Along the same line, we find that the next conclusion in the same paragraph on page 12 “The implication is that while SDSs improve access to essential medicines in most areas, individuals living in low population remote areas may still face sizeable physical and financial barriers.” cannot be fully supported (however true it may be). From where does the evidence come? The assumed higher mark-up on prices in rural areas (which can then be questioned as described above) does not tell us whether or not this means that some people cannot access the medicines for financial reasons (again: however true it may be). In fact, none of the studies chosen are reported in the article to have studied the access issue.

**Response:** Also agree that though probable, the review caries no authority to discuss issues of access. This has been removed from the paragraph in page 12.

**Minor corrections**

4) **Reviewer comment:** Background, paragraph 1, Page 1…increased frequency of interventions…Comment: there is limited earlier evidence for this claim. It is rather a result of the present study.

**Response:** There is in fact an increase in interventions targeting SDSs, as shown by Smith et al and Wafula et al in two previous reviews on interventions for pharmacies and SDSs respectively.

5) **Reviewer comment:** Knowledge and perceptions, paragr. 1, last sentence: “One retailer, for instance, stated that he only sold amoxicillin without a prescription when clients wanted ‘just a little bit’. This is an analysis of 61 articles listing characteristics of Private Medicine Retailers. It therefore seems a bit odd that
reference is made to "One retailer". The validity of the example used to retailers' behaviour is difficult to assess for the reader. We therefore suggest that the sentence in question is deleted from the manuscript.

Response: Agreed. The paragraph has been deleted from page 6.

6) Reviewer comment: Dispensing practices, paragr. 3: "Patient history taking was poorly done overall. This was seen in Ghana, Nigeria and Sudan [9, 55, 59]". If the word "overall" is used one would expect it to apply to all or most of the articles. However, only three out of the 61 are quoted as support to the statement. So, was it "overall", "sometimes seen" or "documented in a few studies"?

Response: Agreed. The sentence was corrected to reflect the fact that this was specifically seen in three studies (page 8). It reads ‘Patient history taking was observed to be poorly done in a number of studies. This was seen in Ghana, Nigeria and Sudan’

7) Reviewer comment: Discussion, paragraph 7: The conclusion "The high willingness to refer clients reported in majority of studies is encouraging,..." seems overly positive given that authors in their results section write: "However, actual referral practices were rarely investigated, and where this was done, the practice was scarcely reported." We suggest that the sentence in the discussion be somewhat modified.

Response: Agreed. The statement was clarified to ensure readers understand that this is 'high willingness to refer', rather than 'high frequency of referral' which is more practice based (page 8).

The sentence now reads ‘Majority of staff interviewed in Ethiopia, Tanzania, Somaliland, Nigeria and Ghana expressed willingness to refer clients when necessary (citations). However, actual referral practices were rarely investigated, and where this was done, the practice was scarcely reported’

Discretionary revisions

8) Reviewer comment: 8.Methods, paragr. 3, last sentence: Error in sentence: "Consequently, a structured narrative synthesis of was undertaken.”

Response: Correction made
9) **Reviewer comment:** Discussion, paragr. 2 (Page 11): “Majority of studies came from Anglophone countries, possibly due to any one of two reasons; a weakness in the search strategy, or an overall lack of interest in SDSs by the biomedical communities in Francophone countries.” Is it possible that articles in French are published in journals that are not found in the search engines used by the authors? How common is it with non-pharmacy drugstores in Francophone countries? Is the number of pharmacists greater? (Something to consider)

**Response:** Definitely food for thought. PubMed publishes abstracts for articles in French, and it would have been possible to find such articles (or at the very least, suggestive titles). We did not see many of these. We do know that SDSs have an important role in some Francophone countries like DRC and Madagascar; however, we did not get many papers from these countries (save for the ACTWatch publications). We agree that it may well be that evaluations are rarely done (or published) in these countries, or that they are published in local journals, or some other journals that are not indexed in the mainstream databases such as PubMed and the Web of science. This is something we will be looking out for more in the future.

10) **Reviewer comment:** Discussion, paragr. 2 (Page 11): “Studies included in the review were highly heterogeneous, reporting a wide range of outcomes including characteristics of staff and shops, knowledge, and reported and observed practices. This made it impossible to pool estimates or assess overall patterns using any quantitative methods. As a result, a structured narrative synthesis was undertaken to describe the findings from the studies.” It would be useful for the reader to get this information in the methods section, before reading the results section.

**Response:** The statement about heterogeneity necessitating a structured narrative synthesis is already included in the methods section. It is the last paragraph in the methods section.

11) **Reviewer comment:** Discussion, paragr. 5, last sentence (Page 14): “The idea of manipulating preferences to influence private sector behaviour has been reported to be effective in some settings [1].” This idea is dominating marketing of pharmaceuticals today. Consumer-targetted marketing of drugs is quite common in the US and Europe (“Tell your doctor to prescribe...”), a fact that could be...

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Please note the change of our name from Wellcome Trust Research Laboratories to KEMRI/Wellcome Trust Research Programme
considered in this discussion. One would assume there are several powerful references to bring out in this context.

**Response:** Totally agree with the views expressed on direct-to-consumer advertising. However, this is not quite what we meant here. What we (hoped) to express is the potential for using public campaigns to improve the way services are provided in SDSs. An example would be educating the public on the individual and broader societal consequences of purchasing partial doses of antibiotics, in the hope that this would mitigate the practice through reducing demand for sub-therapeutic doses of medicines.

To ensure the two are not confused, we have added the following sentence after the statement on manipulating demand side preferences (page 14): ‘This can be achieved using mass media campaigns targeting perverse community behaviours such as taking incomplete doses of antibiotics.’

12) **Reviewer comment:** Dispensing practices, paragraph 3, Page 9 The sentence starting: This was seen in Zimbabwe and Kenya… is a bit difficult to understand.

**Response:** Sentence reworded to make for easier reading.

13) Reference: Viberg et al. BMC Infectious Diseases 2010, 10:270 should be relevant to include.

**Response**

The paper was initially excluded as reporting demand side behaviour and qualitative outcomes on the knowledge of drug shops attendants. However, closer scrutiny of the paper revealed that there is, in fact, a small section reporting proportions of operators who knew about antibiotic resistance. As a result, the entire review has been updated to include the article.
Reviewer 2 (all minor revisions)

1) The last sentence in the Method section is incomplete.

Response:

Sentence corrected

2) Reviewer comment: Pages 5, 6: The author presented results of knowledge and practice together but did not label appropriately.

Response

Section corrected as advised. Knowledge and practice are now presented separately in pages 5 and 6 respectively.

3) Reviewer comment: Page 6: There should be no “discussions” in the results presentation and no associations should be made that were not generated by the study. Any such associations should be appropriately referenced

Response: Agreed and corrected. The sentence talking about the possible reason behind the discordance between knowing the value of bednets and encouraging clients to buy them, has now been removed from the results section on page 6. The statement is now part of the discussion section on page 14.

4) Discussion Page 12: Change the reference (Goodman 2007) in the discussion section to Vancouver style.

Response: Reference corrected.